CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory
An ISO 9001:2008 Certified Company
NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.02/MSV/WMM/Gradation/2015-16 28.08.2015

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.

Agency : **Mr. M.S. Venkatesh,** Contractor, Bangalore.

Name of Work : Providing pot hole filling and patch work at Yelahanka old town area, ~~Marathinagara area and other areas~~ in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.

Reference : AEE/BBMP/YSD/AE-1/164/2015-16 Dated: 26.08.2015

Date of Testing : 28.08.2015

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gm): 7765

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	120	120	1.5	98.5	95-100
22.4	2585	2705	34.8	65.2	60-80
11.2	1295	4000	51.5	48.5	40-60
4.75	1100	5100	65.7	34.3	25-40
2.36	900	6000	77.3	22.7	15-30
0.600	795	6795	87.5	12.5	8-22
0.075	820	7615	98.1	1.9	0-8

Note:

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28.08.2015

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
Agency	**Mr. M.S. Venkatesh,** Contractor, Bangalore.
Name of the Work	Providing pot hole filling and patch work at Yelahanka old town area, ~~Maruthinagara areas and other areas~~ in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
Reference	AEE/BBMP/YSD/AE-1/164/2015-16 Dated: 26.08.2015
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	28.08.2015

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	378	380	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	78	79	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	301	
4	Aggregate Impact value = percent fines	20.63	20.79	
	$100^* (W_2/W_1)\%$			20.71

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.02/MSV/WMM/S-T/2015-16 28.08.2015

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
Agency	**Mr. M.S. Venkatesh,** Contractor, Bangalore.
Name of Work	Providing pot hole filling and patch work at Yelahanka old town area, ~~Maruthinagara areas and other areas~~ in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
Reference	AEE/BBMP/YSD/AE-1/164/2015-16 Dated: 26.08.2015
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	28.08.2015

Result : Flakiness Index = **12.98%**

Elongation Index = **13.26%**

Result : Combined Flakiness & Elongation index **26.24%**

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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JobNo: CTCE/BBMP/W.No.02/MSV/BC/Bitumen/2015-16 16.09.2015

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IRC:SP:11-1984

CLIENT	Asst. Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
AGENCY	Mr. M.S. Venkatesh, Contractor, Bangalore.
NAME OF THE WORK	Providing pot hole filling and patch work at Yelahanka old town area, ~~Maruthinagara areas and other areas~~ in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
REFERENCE	AEE/BBMP/YSD/AE-1/164/2015-16 Dated: 26.08.2015
SAMPLE I/D	Pot hole filling roads in Yelahanka old town area, Maruthinagara Area Ward No.02.
DATE OF TESTING	16.09.2015

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474.5	472.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	25.5	27.50
7. Bitumen content in %	5.10	5.50
8. Average	5.30	

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JobNo: CTCE/BBMP/W.No.02/MSV/BC/Bitumen/2015-16 16.09.2015

BITUMEN CONTENT AFTER GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As Per IS 2386 and IRC:SP:11-1984

CLIENT	Asst. Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
AGENCY	Mr. M.S. Venkatesh, Contractor, Bangalore.
NAME OF THE WORK	Providing pot hole filling and patch work at Yelahanka old town area, ~~Maruthinagara areas and other areas~~ in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
REFERENCE	AEE/BBMP/YSD/AE-1/164/2015-16 Dated: 26.08.2015
SAMPLE I/D	Pot hole filling roads in Yelahanka old town area, Maruthinagara Area Ward No.02.
DATE OF TESTING	16.09.2015

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	49.68	10.47	10.47	89.53	79-100
9.5	35.26	7.43	17.90	82.10	70-88
4.75	69.65	14.68	32.58	67.42	53-71
2.36	70.23	14.80	47.38	52.62	42-58
1.18	52.65	11.10	58.48	41.52	34-48
0.6	62.32	13.13	71.61	28.39	26-38
0.3	32.65	6.88	78.49	21.51	18-28
0.15	22.36	4.71	83.20	16.80	12-20
0.075	40.29	8.49	91.69	8.31	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	32.95	6.97	6.97	93.03	79-100
9.5	45.65	9.66	16.63	83.37	70-88
4.75	72.32	15.31	31.94	68.06	53-71
2.36	64.52	13.66	45.60	54.40	42-58
1.18	68.52	14.50	60.10	39.90	34-48
0.6	42.65	9.03	69.12	30.88	26-38
0.3	35.65	7.54	76.67	23.33	18-28
0.15	39.68	8.40	85.07	14.93	12-20
0.075	42.98	9.10	94.16	5.84	4-10

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